



# **Section 3-1:**

## **Tools of Modern Astronomy**

# I. Waves

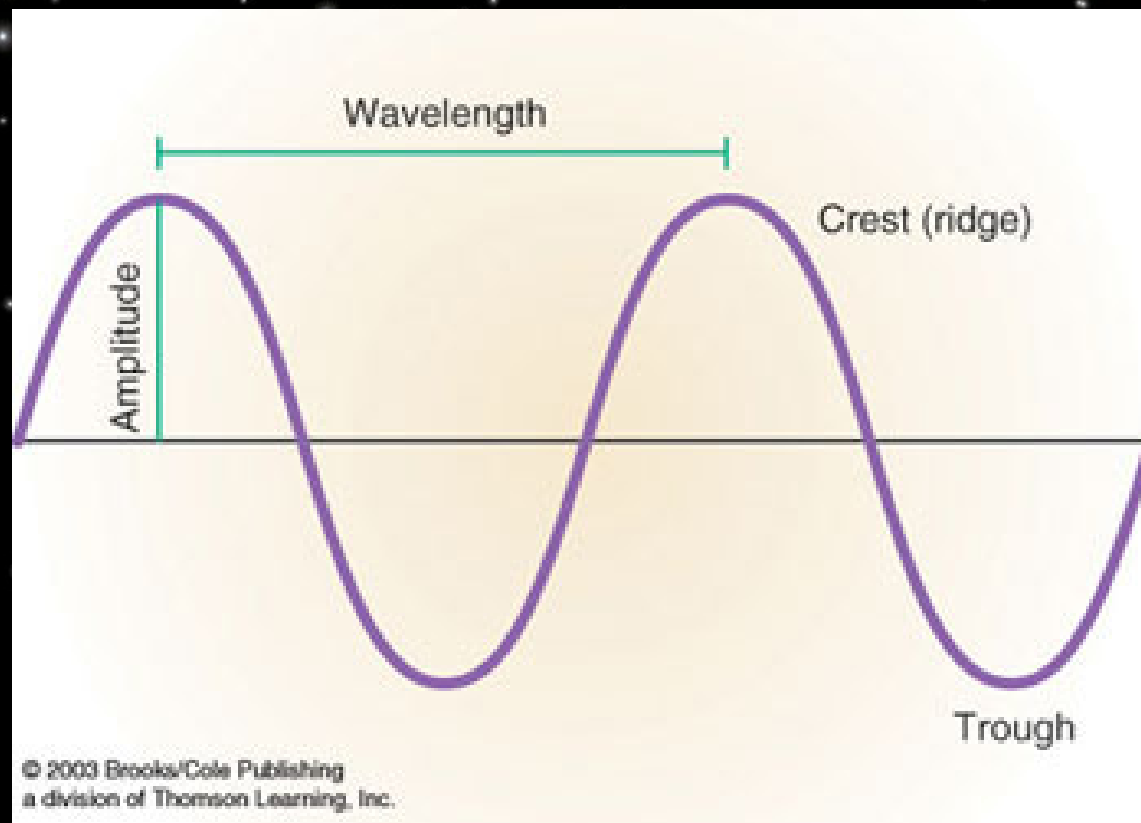
## A. Types

1. **Visible Light - light you see**
2. **Electromagnetic Radiation - energy that can travel through space as waves**

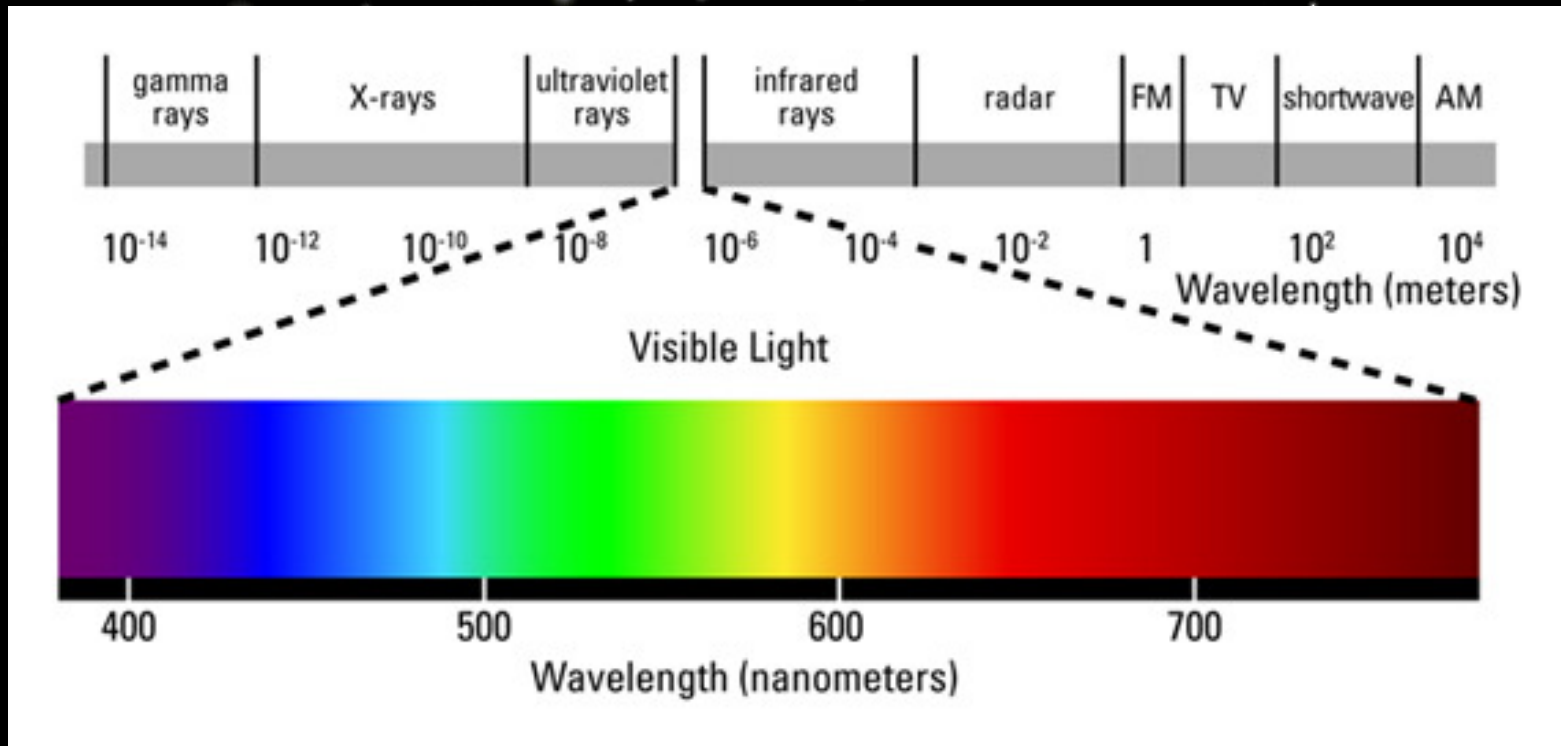
## B. The Spectrum

1. **Ranges from long waves to short waves**

## 2. **Wavelength** - distance between the crest of one wave and the crest of the next wave



### 3. **Spectrum** - break light into different colors w/ different wavelengths (ROYGBIV)

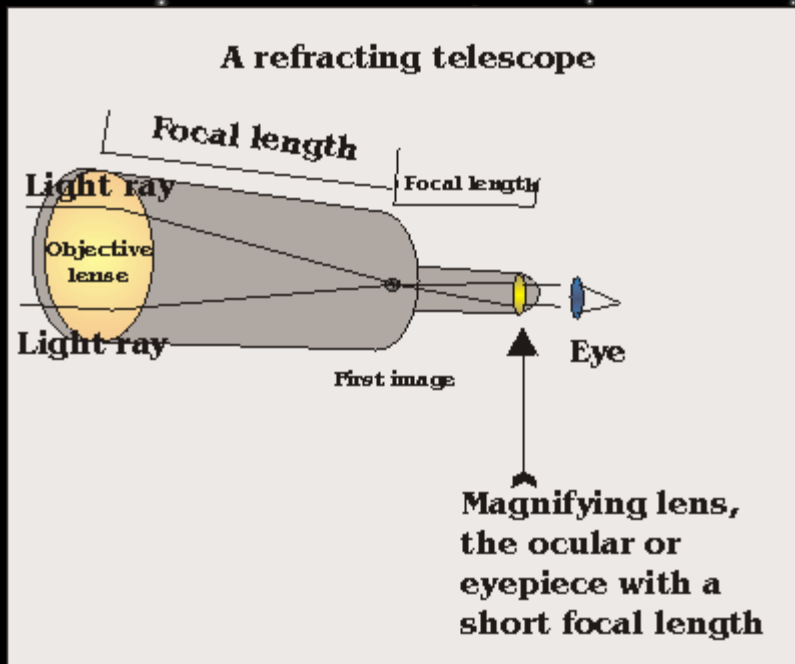


# II. Telescopes

## A. Visible Light Telescopes

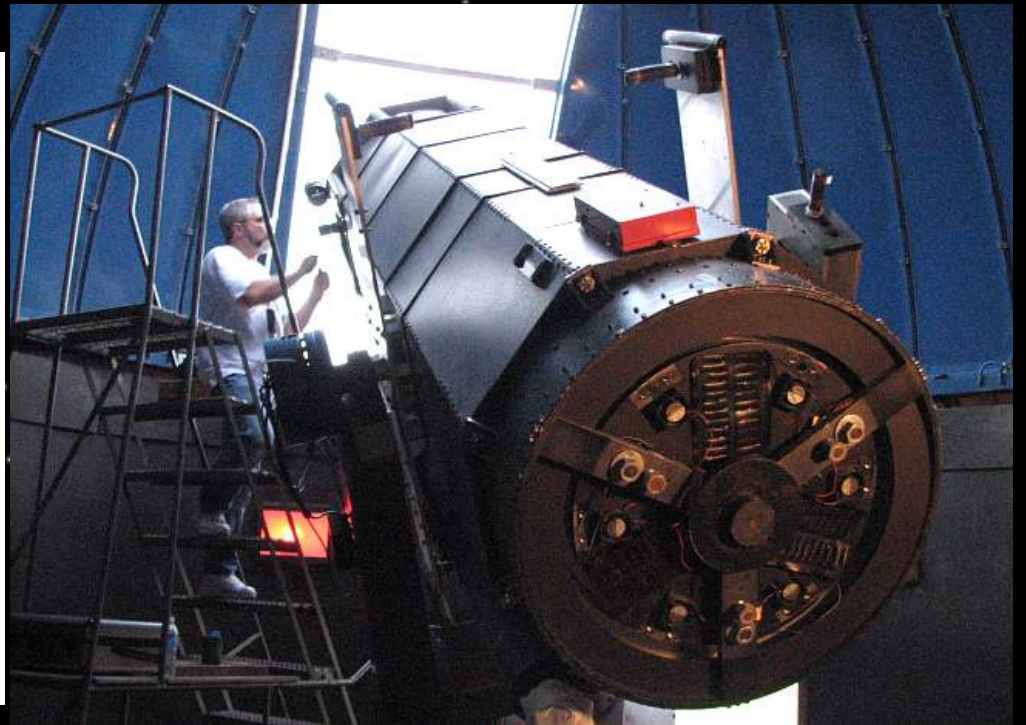
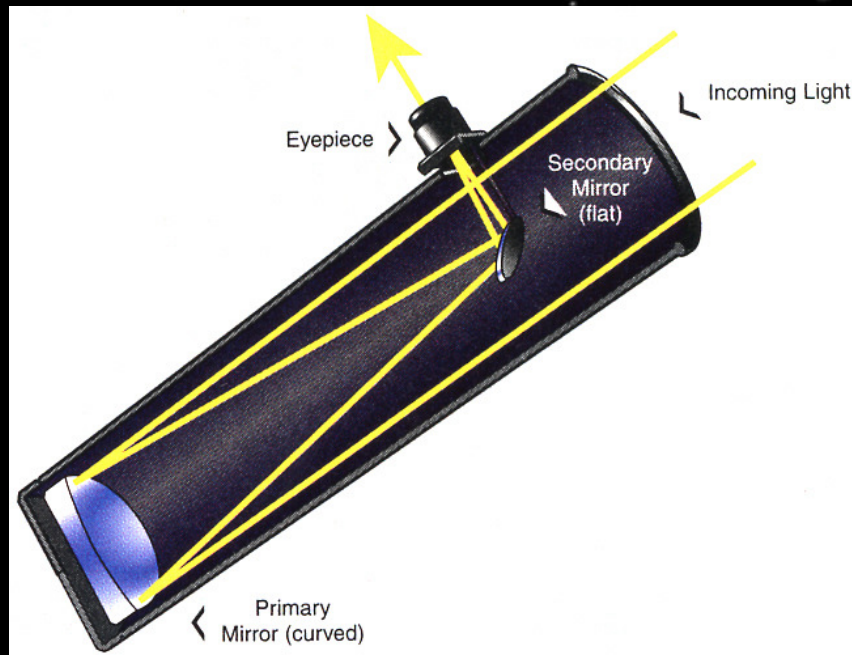
1. **Refracting Telescope** – **convex lens** gathers large amount of light to focus onto a small area

a. Tube; lens at each end



## 2. Reflecting Telescope – uses one or more mirrors to gather light

### a. Large, modern telescopes

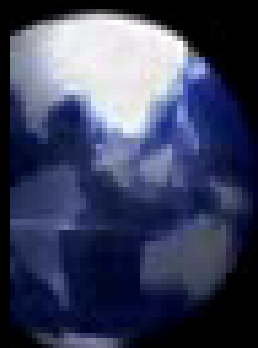




**B. Radio Telescope** – used to **detect radio waves** from objects in space

1. Located anywhere; used 24 hours a day



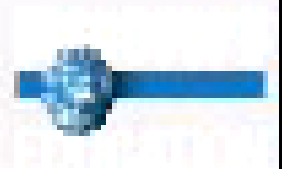


**Discovery**  
  
**EDUCATION**





# Investigation



# III. Observatories

A. **Observatory** – building that contains one or more telescopes

1. location: mountaintops



# IV. Spectrographs

A. Breaks light from an object into different colors

1. Used to collect temperature and composition data of stars